Roland

MIDI

DIGITAL EFFECTS PROCESSOR DEP-3

Owner's Manual

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lighting flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK OR INJURY TO PERSONS.

IMPORTANT SAFETY INSTRUCTIONS

WARNING When using electric products, basic precautions should always be followed, including the following;

1. Read all the instructions before using the product.
2. To reduce the risk of injury, close supervision is necessary when a product is used near children.
3. Do not use this product near water- for example, near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, or the like.
4. This product should be used only with a cart or stand that is recommended by the manufacture.
5. This product, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss.
   Do not operate for a long period of time at a high volume level or at level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
6. The product should be located so that its location or position does not interfere with its proper ventilation.
7. The product should be located away from heat sources such as radiators, heat registers or other products that produce heat.
8. The product should avoid using in where it may be effected by dust.
9. The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.
10. The power-supply cord of the product should be unplugged from the outlet when left unused for a long time.
11. Do not tread on the power-supply cord.
12. Do not pull the cord but hold the plug when unplugging.
13. When setting up with any other instruments, the procedure should be followed in accordance with instruction manual.
14. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
15. The product should be serviced by qualified service personnel when:
    - A: The power-supply cord or the plug has been damaged; or
    - B: Objects have fallen, or liquid has been spilled into the product; or
    - C: The product has been exposed to rain; or
    - D: The product does not appear to operate normally or exhibits a marked change in performance; or
    - E: The product has been dropped, or the enclosure damaged.
16. Do not attempt to service the product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.

SAVE THESE INSTRUCTIONS

WARNING

THIS APPARATUS MUST BE EARTH GROUNDED.

The three conductors of the mains lead attached to this apparatus are identified with color as shown in the table below, together with the matching terminal on the UK type power plug. When connecting the mains lead to a plug, be sure to connect each conductor to the correct terminal, as indicated.

"This instruction applies to the product for United Kingdom."

MAINS LEADS		PLUG
Conductor	Color	Mark on the matching terminal
Live	Brown	Red or letter L
Neutral	Blue	Black or letter N
Grounding	Green-Yellow	Green, Green-Yellow, letter E or symbol

Bescheinigung des Herstellers /Importeurs

Hiermit wird bescheinigt, daß der/die/das

ROLAND DIGITAL EFFECTS PROCESSOR DEP-3

(Gerat, Typ Bezeichnung)

in Übereinstimmung mit den Bestimmungen der

Amtsbl. Vfg 1046 / 1984

(Amtsblattverfugung)

funk-entstört ist.

Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

Roland Corporation Osaka / Japan

Name des Herstellers/Importeurs

RADIO AND TELEVISION INTERFERENCE

"Warning" - This equipment has been verified to comply with the limits for a Class B computing device, pursuant to Subpart J, of Part 15, of FCC rules. Operation with non-certified or non-verified equipment is likely to result in interference to radio and TV reception.

The equipment described in this manual generates and uses radio frequency energy. If it is not installed and used properly, that is, in strict accordance with our instructions, it may cause interference with radio and television reception.

This equipment has been tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J, of Part 15, of FCC Rules. These rules are designed to provide reasonable protection against such a interference in a residential installation. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by the following measure:

- Disconnect other devices and their input/output cables one at a time. If the interference stops, it is caused by either the other device or its I/O cable.

These devices usually require Roland designated shielded I/O cables. For Roland devices, you can obtain the proper shielded cable from your dealer. For non Roland devices, contact the manufacturer or dealer for assistance.

If your equipment does cause interference to radio or television reception, you can try to correct the interference by using one or more of the following measures:

- Turn the TV or radio antenna until the interference stops.
- Move the equipment to one side or the other of the TV or radio.
- Move the equipment farther away from the TV or radio.
- Plug the equipment into an outlet that is on a different circuit than the TV or radio. (That is, make certain the equipment and the radio or television set are on circuits controlled by different circuit breakers or fuses.)
- Consider installing a rooftop television antenna with coaxial cable lead-in between the antenna and TV.

If necessary, you should consult your dealer or an experienced radio/television technician for additional suggestions. You may find helpful the following booklet prepared by the Federal Communications Commission:

"How to Identify and Resolve Radio-TV Interference Problems."

This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402. Stock No. 004-000-00345-4

Please read the separate volume "MIDI", before reading this owner's manual.

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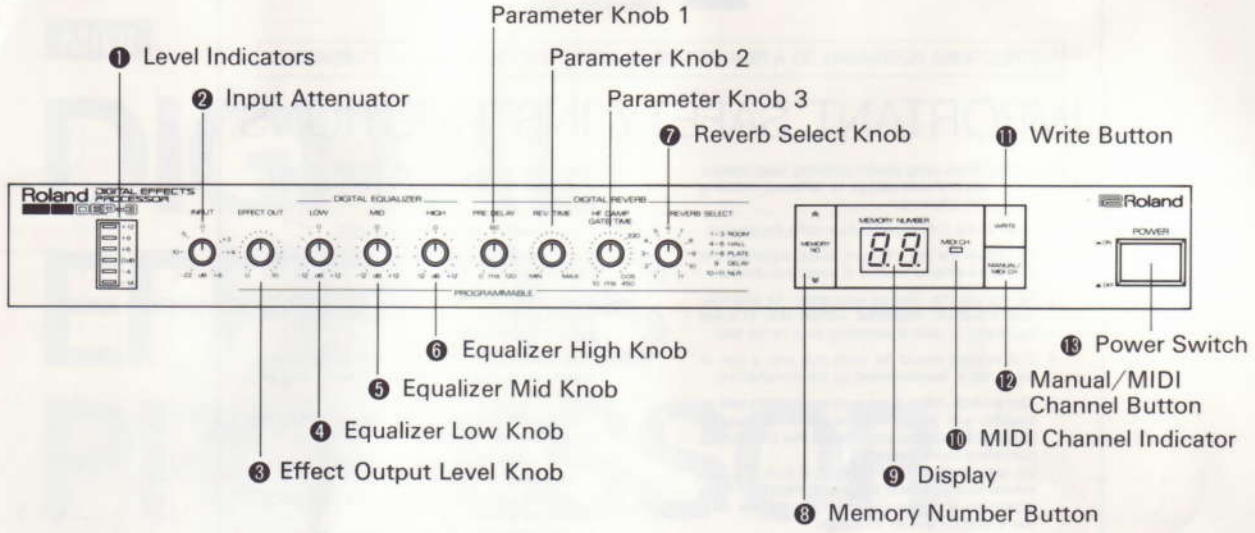
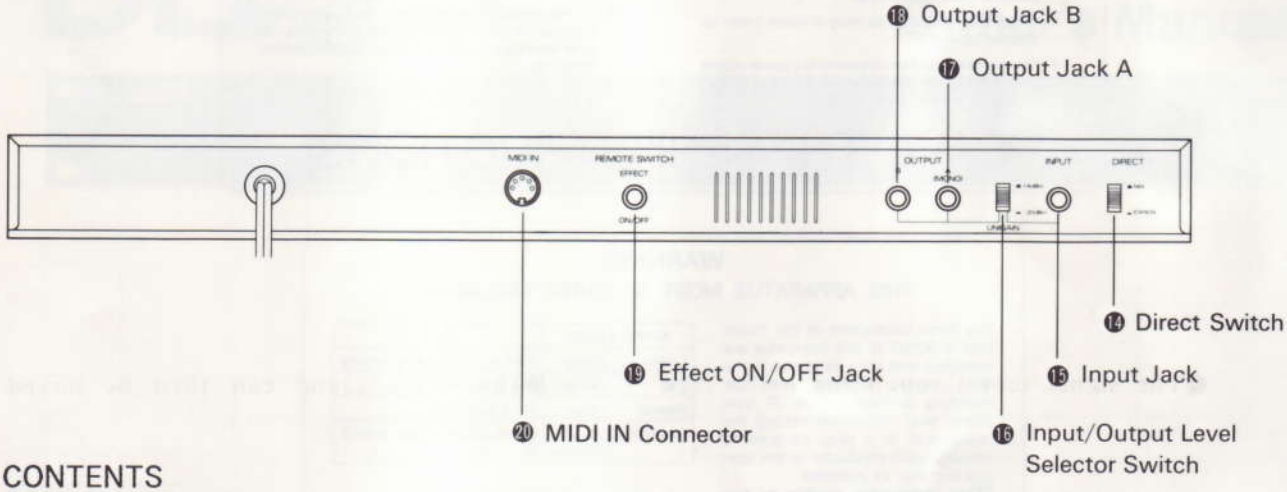
PANEL DESCRIPTION





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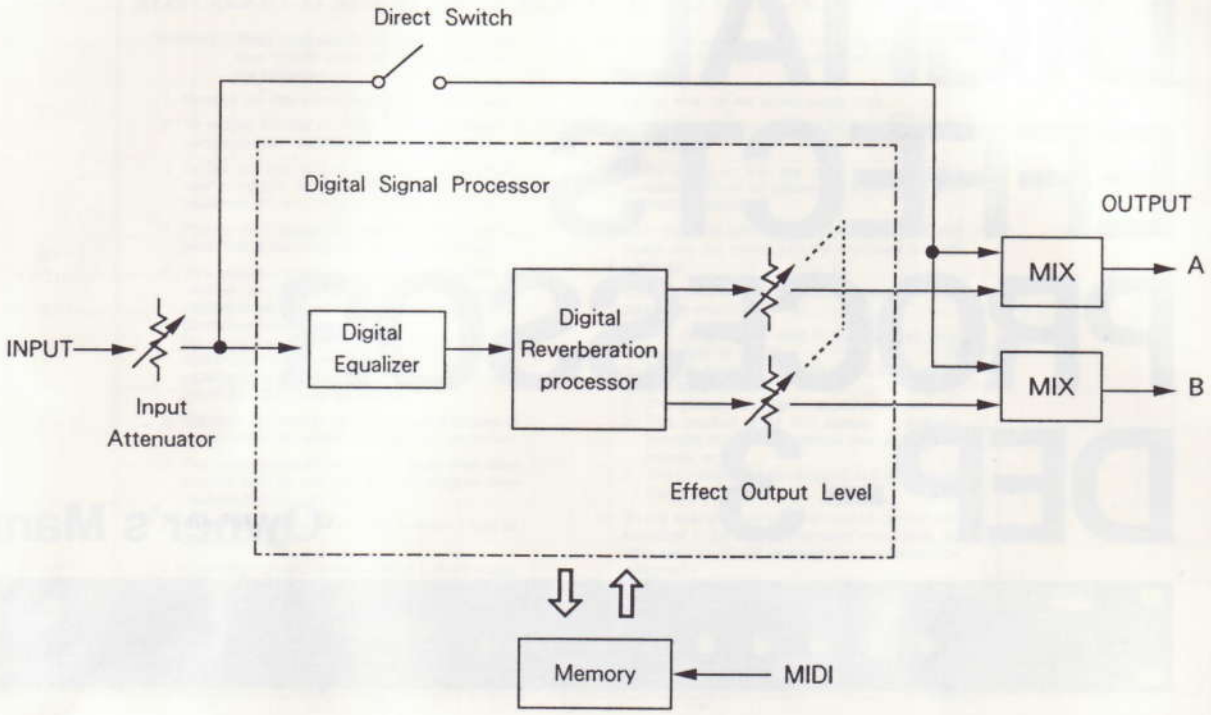
FLOWCHART OF THE DEP−3



- The signal sent through the Input Jack goes to the Input Attenuator then to the Digital Signal Processor. The Input Attenuator serves to adjust the level of the signal before sending it to the Digital Signal Processor.

- At the Digital Signal Processor, the frequency response of the signal is altered by the 3 Band Equalizer. It is then processed with 28 bit parallel arithmatic digital processor, and comes out in its final form (effect sound).

- The effect sound can then be mixed with the direct sound.

- The DEP−3 features a memory capacity that retains 99 different effect settings which can be recalled easily by using the buttons on the panel or by using the MIDI program change messages sent from an external device.

The DEP−3 is a versatile effect that features three effects: Reverb, Delay, and Nonlinear (=gate reverb that cuts the reverberation at a certatin gate time) each having equalizing function.

FEATURES

- The DEP−3 adopts the 16 bit linear A/D/A convertion system and 28 bit internal arithmatic digital signal processor, allowing dynamic range of 86dB and total harmonic distortion of under 0.08 %.
- The digital reverb section includes three different types of ambient environments: Room, Hall and Plate. There are three Rooms and Halls of different reverb sizes and densities, and two types of Plates. Gated reverb can be obtained using non −linear mode, and delay effect can be obtained using Delay mode.
- A three band equalizer is built in.
- Up to 99 different effect settings can be written into memory.
- Since the DEP−3 is equipped with MIDI, other MIDI devices can remotely select the different effect programs through MIDI Program Change messages.

IMPORTANT NOTES

- Please use the appropriate line voltage which is shown on the name plate.
- It is normal for this device to become warm while it is being operated.
- Avoid using this device in extreme heat, humidity or where it may be affected by dust.
- Use mild detergent for cleaning. Do not use solvents such as thinner.
- Please avoid placing or dropping anything heavy on the power cable.
- Operating this device near a neon or fluorescent lamp may cause noise interference. If so, change the angle of the device.
- If the unit is not to be used for a long period of time, unplug the cord from the socket.
- This unit may not operate properly if turned on immediately after turned off. If this happens, simply turn it off, then turn it on again after waiting a few seconds.
- Do not attempt to disassemble this unit unless you are an authorized Roland Service Center.
- About five seconds after the unit is turned on, the muting circuit functions, therefore no sound is heard.
- The DEP−3 features a memory back−up system that retains the data even when switched off. The battery that supports the back−up circuit should be replaced every five years. Call Roland for the battery replacement. (The first replacement may be required before five years, depending on how much time had passed before you purchased the device.

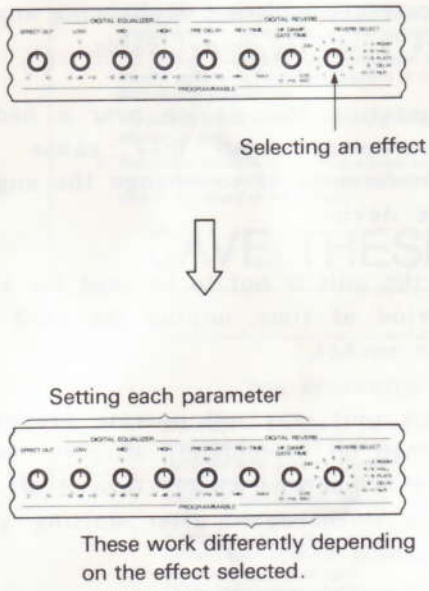
1 OUTLINE OF THE DEP-3

1. DEP-3

The DEP-3 features three effects: Reverb, Delay, Nonlinear (gate reverb) that cuts the reverberation at a certatin gate time and an Equalizer.

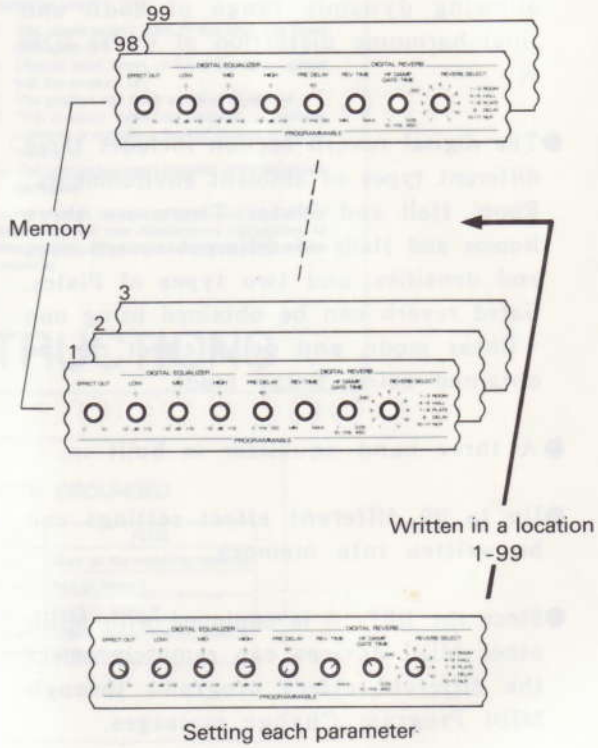
To program effects:

Select an effect with the Reverb Select Knob (located at the far right of the panel), then edit each parameter such as reverb time, delay time by moving the correspoding control knob on the panel.



When you have edited the effect, write it into memory:

The DEP-3 allows you to write the effect setting you have made (=position of the knobs) into the internal memory. The DEP-3's memory capacity can retain up to 99 effect settings from Memory Number 1 to 99.



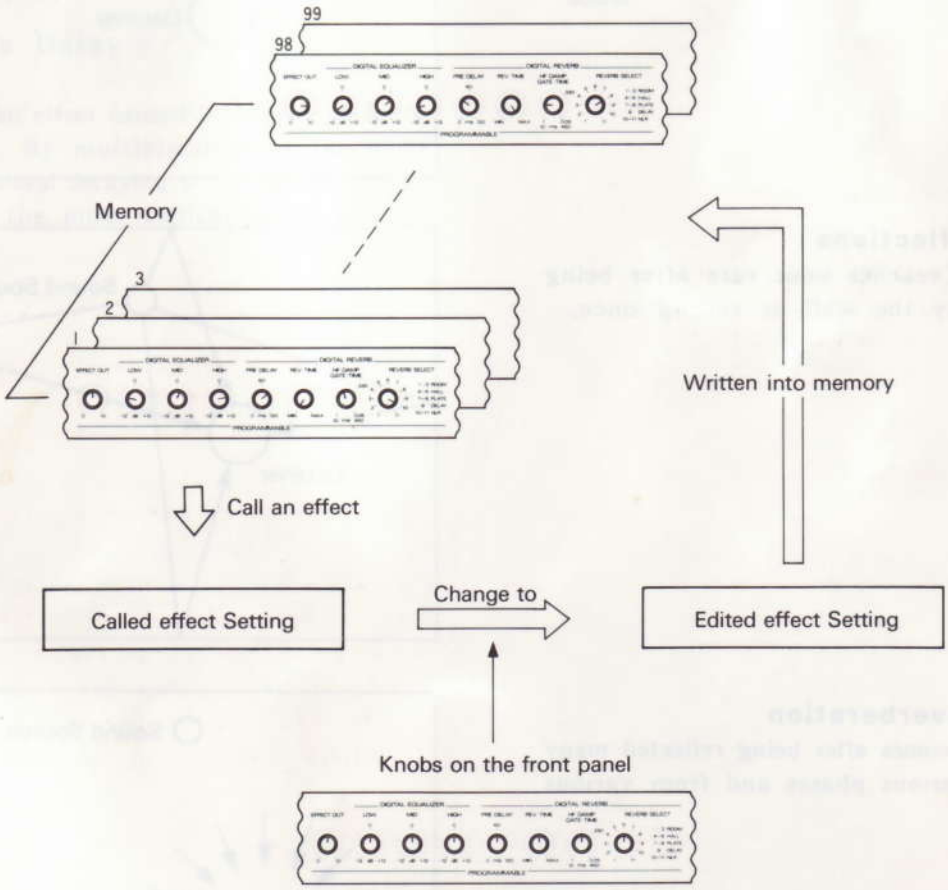
Calling an effect setting from memory:

You can use the written effect setting later at any time. Call the effect you want by assigning the corresponding Memory Number. Here, the positions of the knobs on the panel have nothing to do with the effect currently produced.

Editing the written effect setting :

The effect you call from memory is not affected by the current positions of the knobs on the panel. In other words, the panel setting has no meaning at all (except for the Input Attenuator locatd at the far left of the front panel).
Rotating the knob even slightly will cancel its previous setting and set the new value. This, however applies only to the knobs which you have moved. If you wish all the knobs on the panel controls the effect currently in use, turn the DEP-3 to the Manual mode.(See page 14.)

The edited data should be written into memory ; either a different Memory Number or the same Number. Writing a new data will automatically erase any previous effect written in that location (Memory Number). However, the Memory Numbers from 1 to 20 can be restored at any time by following the procedure explanined on page 23.

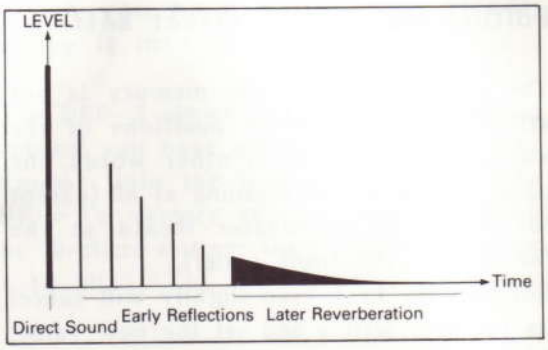


2. EFFECTS

What is reverberation ?

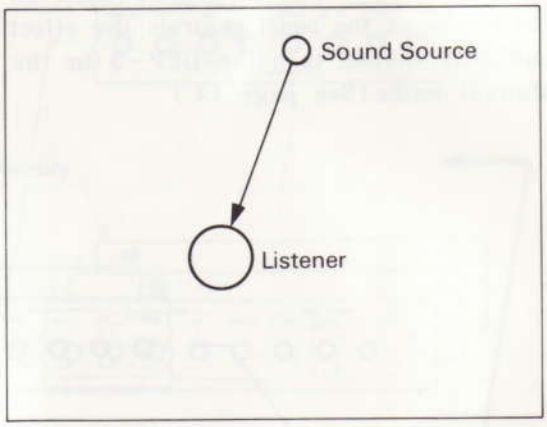
A sound reverberated in an acoustic environment consists of three parts. First, you hear the direct sound as it travels from the source outward. Next, the early reflection resounds once or several times from walls, ceiling, and floor. Finally, you hear the reverberated sound as it reflects many times in the environment.

The picture will help understand what reverberation is.



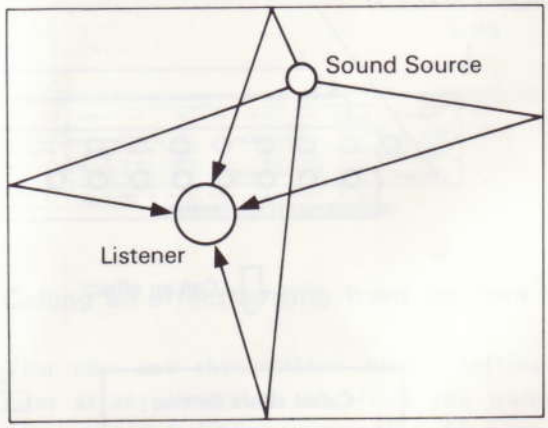
Direct Sound

The sound reaches your ears directly from the sound source. Naturally, this is heard first.



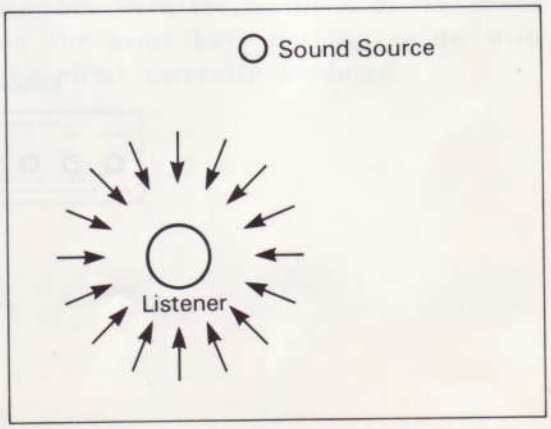
Early Reflections

The sound reaches your ears after being reflected by the wall or ceiling once.



Later Reverberation

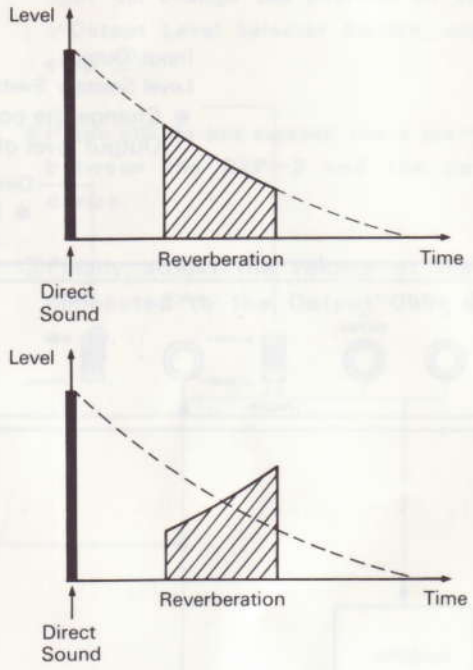
The sound comes after being reflected many times in various phases and from various directions.



What is Non-Linear?

Non-linear Reverb is the reverb which is cut at a certain gate time. It is also called gate reverb or gate echo. The DEP-3 has two non-linear reverbs: Normal that cuts a natural reverberation, and Reverse that cuts the increasing reverberation.

Non-linear is specially effective for percussive sounds such as snare drum.

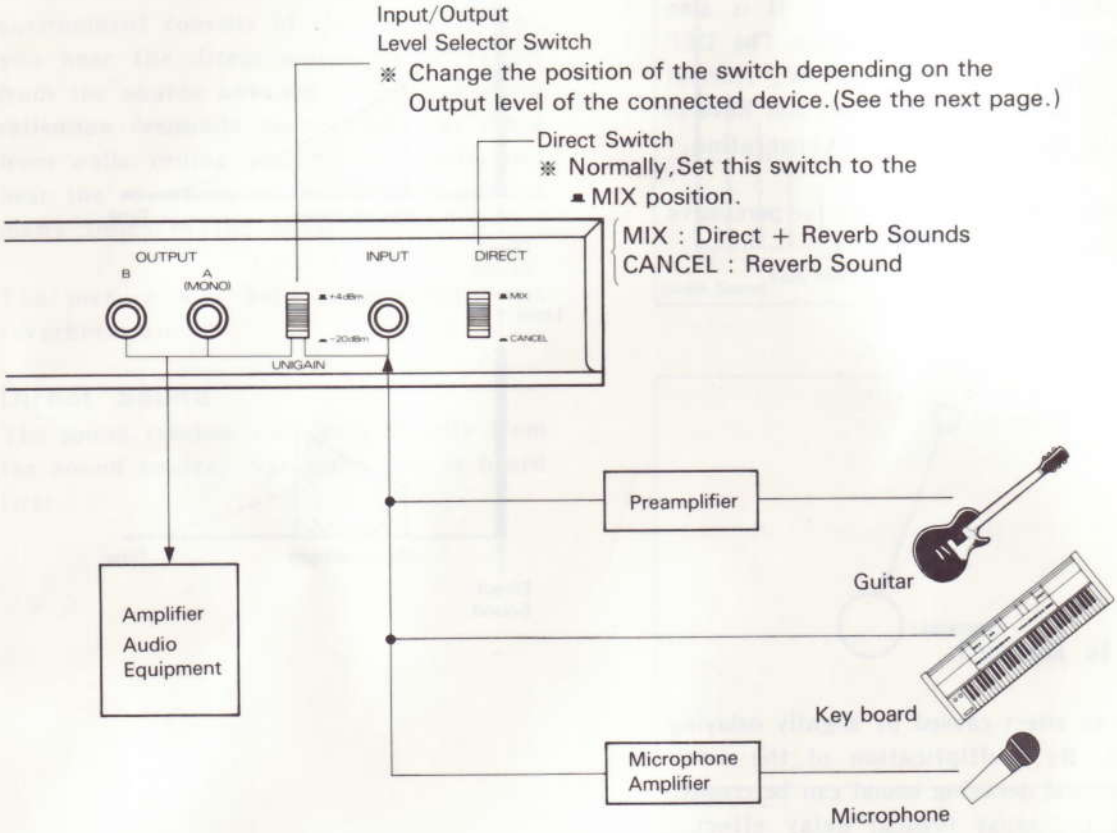


What is Delay?

Delay is an effect caused by slightly delaying a sound. By multiplication of the delay effects, natural decaying sound can be created. Echo is the most typical delay effect.

2 BASIC OPERATION

1. CONNECTIONS



2. LEVEL SETTING

When you have completed connecting the DEP−3 with other devices, set the level of the DEP−3 as follows so that there will be the least noise and distortion.

***Once the level is set, you do not have to change it unless the output level of the device connected to the Input Jack is drastically changed.**

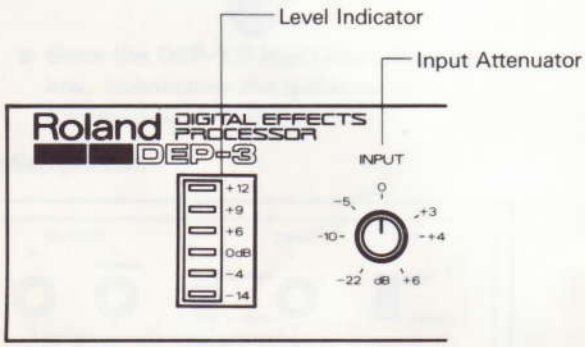
PROCEDURE

①Set the Input/Output Selector Switch ⑯ depending on the output level of the device connected to the Input Jack ⑮.

[e.g.]
+4dBm : Roland Rack System
Professional Audio Equipment

−20dBm : Electronic Musical Instrument such as synthesizer
Consumer−type Audio Equipment, etc.

②Set the Input Attenuator to the position where +9dB of the Level Indicators lights up at the highest volume. If you cannot achieve this, change the volume of the device connected to the Input Jack.



***If you still cannot make the +9dB indicator light up, change the position of the Input/Output Level Selector Switch, and repeat step ②.**

***If you still do not succeed, use a pre−amplifier between the DEP−3 and the connected device.**

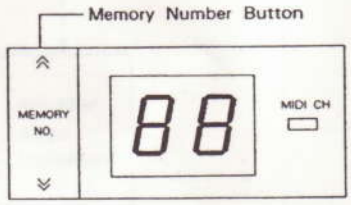
③Finally, adjust the volume of the device connected to the Output Jack ⑰ and/or ⑱.

3. RECALLING FACTORY PRESET EFFECTS

The DEP-3 's memory capacity can retain up to 99 effect settings. 99 different effects (Memory Numbers 1 to 99) are preprogrammed from the manufacturer. Refer to the separate booklet "Factory Programmed Effects".

⇨Call any of the factory programmed effects by pushing the Memory Number (Up and Down) Button.

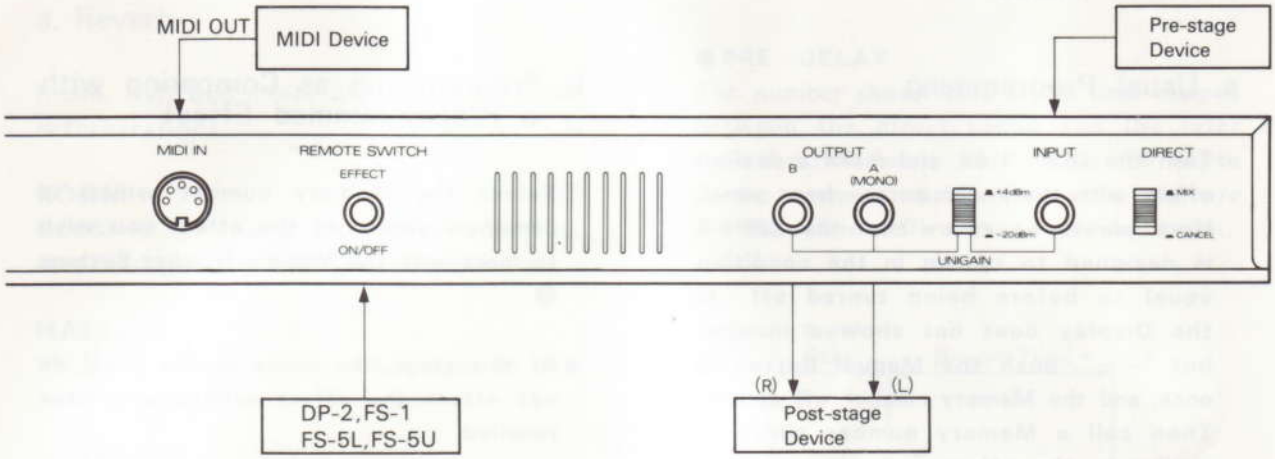
Pushing ⩓ side increases the number and ⩔ side decreases.



Whenever necessary, adjust the volume of the device connected to the Output Jack.

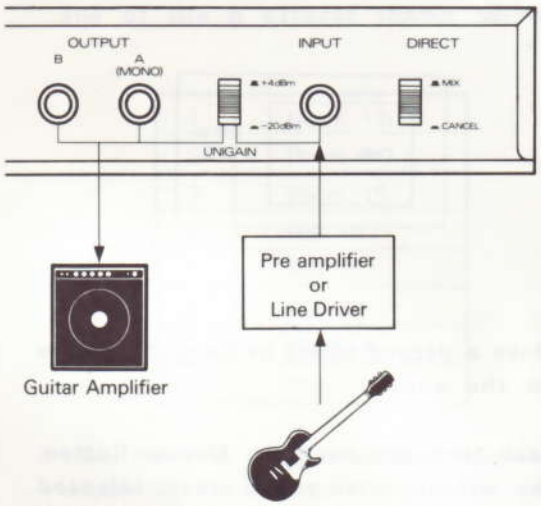
3 GENERAL OPERATION

1. CONNECTIONS



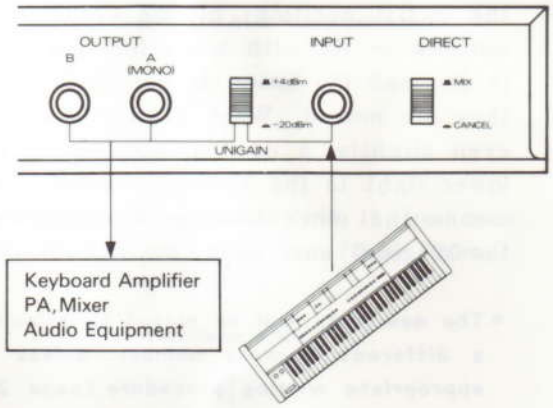
Setting Examples

〈Electric Guitar〉

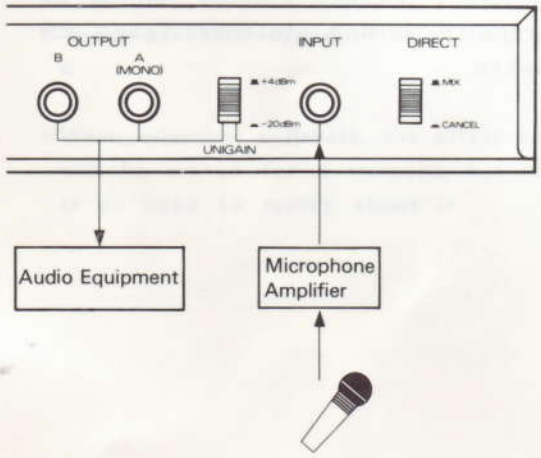


※ Since the DEP-3'S input impedance is low, connecting the guitar directly to the Input Jack does not.

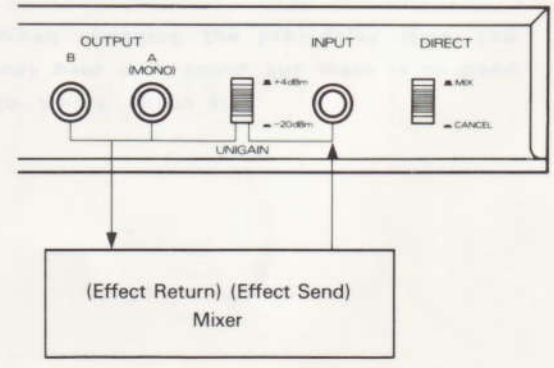
〈Keyboard〉



〈Microphone〉



〈PA, Mixer〉



2. PROGRAMMING EFFECTS

There are two methods for programming effects as follows.

a. Usual Programming

⇨Turn the DEP−3 on, and make a desired effect with the knobs on the front panel. Here, please be aware that the DEP−3 is designed to remain in the condition equal to before being tunred off. If the Display does not show a number but "− −", push the Manual Button ⓬ once, and the Memory number will appear. Then call a Memory number which is similer to the effect program you wish to make by pushing relevant Memory Number Buttons ❽, and edit it.

Be sure to move all the knobs, because the initial positions of the knobs have nothing to do with the effect currently in use, and the knobs do not work unless they are moved. When a knob is moved even slightly, a decimal appears at the lower right to the Memory number. This means that the effect is changed from the original one.

＊The new data will be erased by selecting a different Memory number, unless an appropriate writing procedure (page 22) is taken.

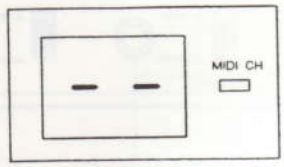
b. Programming as Comparing with a Preprogrammed Effect

①Select the Memory number which is somehow similar to the effect you wish to make with the Memory Number Buttons ❽.

＊At this stage, the knobs on the panel do not affect the effect setting you have recalled.

②Push the Manual Button ⓬.

＊Now, the knobs on the panel control the values of all the corresponding parameters.



③Make a desired effect by using the knobs on the panel.

④Each time you push the Manual Button, the effect setting you have selected in step ① and the current effect are alternately obtained.

The new data will be erased by selecting a different Memory number, unless an appropriate writing procedure (page 22) is taken.

3. REVERB SELECTION AND PARAMETERS

a. Reverb

Room, Hall and Plate are the three basic reverberations.

ROOM
ROOM is a sharp, expansive and rich reverberation of high reverb density.

HALL
HALL is a deeper reverberation of low reverb density.

PLATE
PLATE is bright and metalic reverb which is ideal for percussive sound.

⇨Using the Reverb Select Knob ❼, select any of the 8 effects shown below.

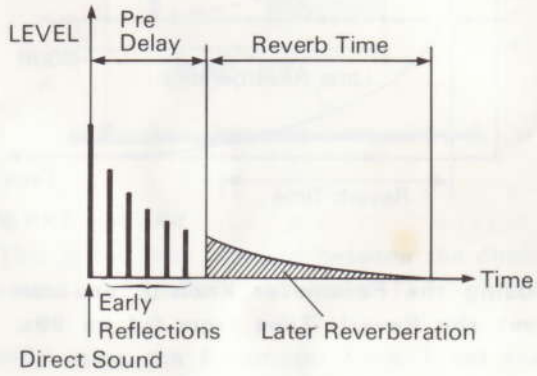
1	Room 1.0
2	Room 7.0
3	Room 15
4	Hall 15
5	Hall 22
6	Hall 26
7	Plate • A
8	Plate • B

*** When ROOM or HALL is selected, the number shown at the right in the above table represents the size of the room. The room here, however, is considered to be a cube, therefore, the number represents the side of a cube (meter).**

*** There are two types of PLATE's A and B.**

*** When selecting a Reverb, the effect sound will be muted for a moment, but there is no need to worry about it.**

● PRE-DELAY
The number shown here is the time elasped between the direct sound and the later reverberation (ms). This shows the depth of the room (or hall). Increasing the pre-delay time will make a deeper room.

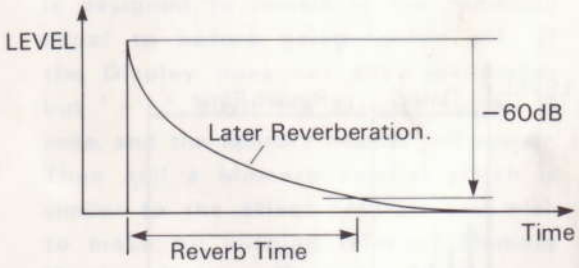


⇨With the Parameter Knob 1, you can change the pre-delay time (0 to 120ms).

*** When changing the pre-delay time, you may hear click sound, but there is no need to worry about it.**

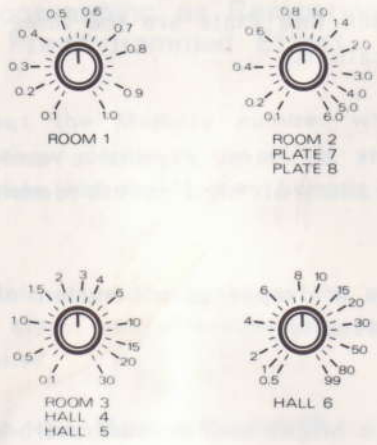
● REVERB TIME

This is the length of the later reverberation. It is the time (sec) needed for later reverberation to reduce by 60dB. This shows the wall reflection ratio of an actual room (or hall).



⇨Using the Parameter Knob 2, you can set the Reverb Time from 0.1 to 99s.

***The reverb time is greatly related to the room size. Depending on which Reverb is currently selected (ROOM, HALL, PLATE), the highest and lowest limits of the reverb time will vary. Also, the same position of the knob means a different reverb. time depending on the Reverb currently selected. (See the following picture.)**



● HF DAMP

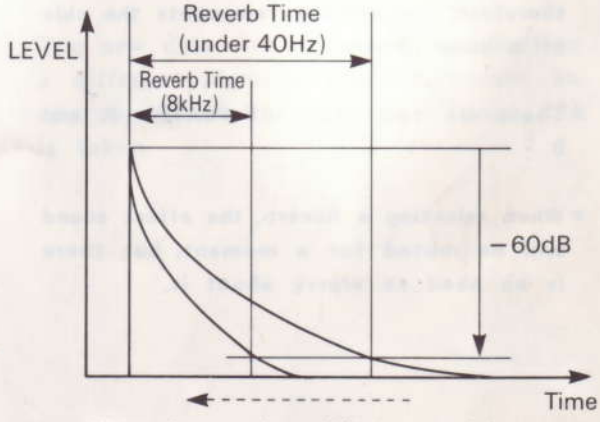
The HF Damp is the rate of the higher frequency's decay. In actual room or hall, this would be controlled by the material which the wall is made of.

Reverb Time x HF Damp value = Reverb Time of 8kHz

e.g.)

When the reverb time is 6s and HF Damp is 0.50, the reverb time of the 8kHz is:

6 (s) x 0.50=3 (s)



Higher frequencies will fade out quicker.

⇨**Set the value of the HP Damp from 1 to 0.05 using the Parameter Knob 3.**

b. Non−linear

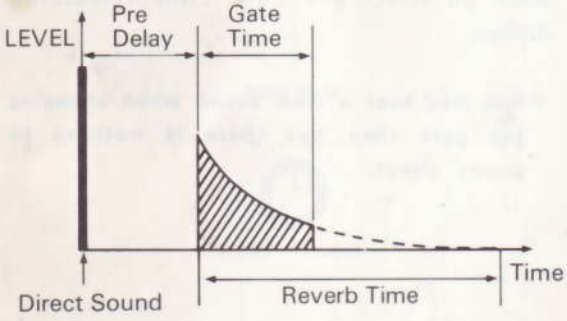
Non−linear Reverb (=gate reverb) is the reverb which is cut at a certain gate time, therefore ideal for percussive sounds such as snare drum.

*** Non−linear Reverb has no early reflections. (See page 8).**

⇨**By using the Reverb Selector Button ❼, select either 10 (Normal) or 11 (Reverse).**

Normal

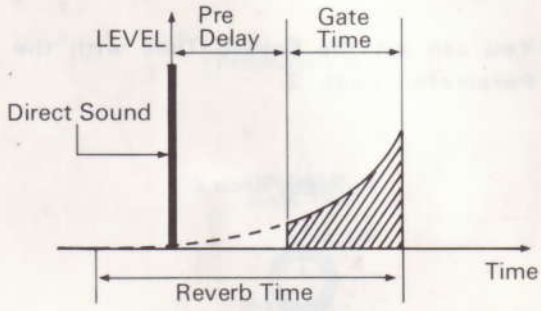
The volume of the reverberation decreases.



When the reverb time is positive (+).

Reverse

The volume of the reverberation increases.



When the reverb time is negative (−).

● PRE−DELAY

This is the time elaspsed between the direct sound and reverberation (ms).

⇨**By using the Parameter Knob 1, set the Pre−delay Time (0 to 120ms).**

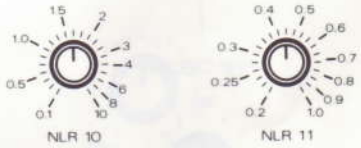
*** When changing the pre−delay time, you may hear a click noise, but there is nothing to worry about.**

● REVERB TIME

This is the amount of time for the reverberation to decay (ms).

⇨You can set the Reverb Time with the Parameter Knob 2.

***The available range of the reverb time differs in the Normal or the Reverse mode.**



● Gate Time

After the pre-delay time is elapsed, the Gate Time set here will determine the time needed for the reverberation to end (ms).

⇨You can set the Gate Time with the Parameter Knob 3 from 10 to 450ms.

The longest gate time of the DEP-3 is 450ms with the pre-delay set to 0ms. When the pre-delay is set longer, the longest gate time of the DEP-3 will decrease.

e.g.)

With the Pre-delay set to 120ms, the longest Gate Time is 330ms. Rotating the Parameter Knob further than the 330 position will have no effect, the Gate Time remaining 330ms.

***You may hear a click sound when changing the gate time, but there is nothing to worry about.**

c. Delay

⇨You can select the Delay mode by setting the Reverb Selector Knob ❼ to 9 (Delay) position.

*For editing the parameters of the Delay, use the Parameter Knob 1 to 3.(The functions which these knobs serve for in the Delay mode are not marked on the knobs.)

⇨Using the Parameter Knob 1, you can set the Delay Time from 2 to 500ms.

⇨Using the Parameter Knob 2, set the number of repeats from 0 to 99 %.

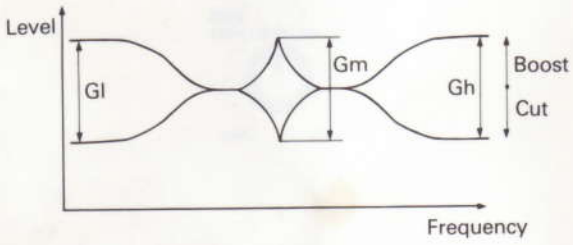
⇨Using the Parameter Knob 3, set the rate of high frequency filtering from 1 to 0.05.

4. EQUALIZER AND EFFECT OUTPUT LEVEL

a. Equalizer

The DEP-3 features a three band Digital Equalizer where the signal is filtered before going to the Digital Reverb Processor section.
The Equalizer changes the frequency characteristics of the effect sounds.

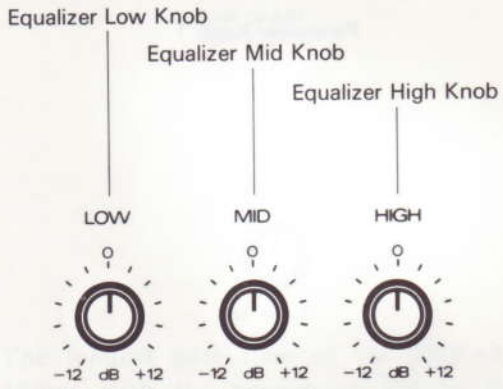
***The Equalizer section has no effect on the direct sounds.**



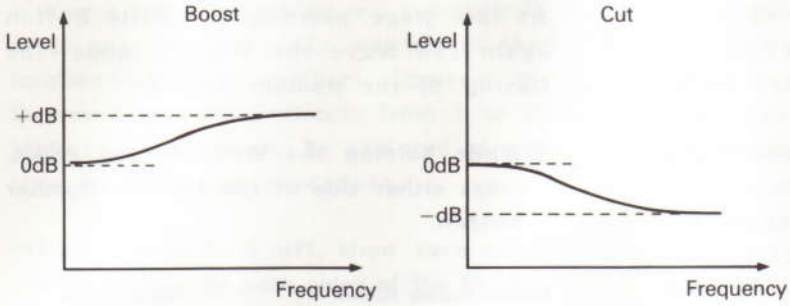
Gl, Gm, Gh : Boost/Cut Value (l···Low , m···MID , h···HI)

⇨Set the amount (dB) of the boosting or cutting of the Low, Mid and High Filters with the corresponding Equalizer Knobs.

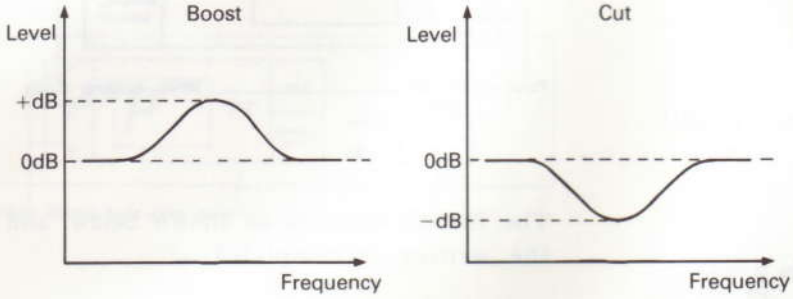
***The variable range is −12 to +12 dB. A positive number boosts and a negatime number cuts the frequency.**



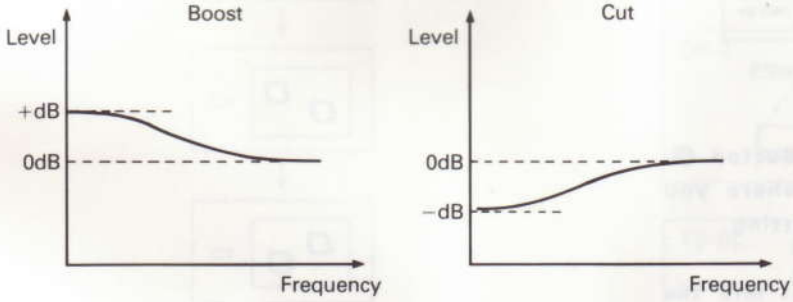
• HIGH



• MID



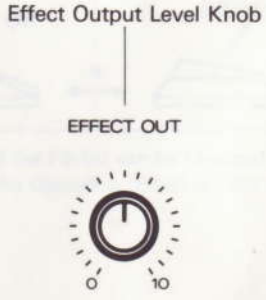
• LOW



b. Effect Output Level

When you have finished all the effect settings, adjust the Output Level of the effect sound as follows. This way, you can change the balance of the direct and effect sounds.

⇨You can set the output level from 0 to 99 with the Effect Output Level Knob.



5. WRITING INTO MEMORY

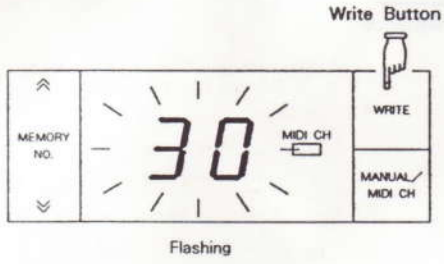
The Memory function of the DEP−3 allows you to store the Reverb Selection and each patameter setting you have made.

Writing a new effect setting will automatically erase any previous data written in that location (Memory number). However, the Memory numbers from 1 to 20 can be restored by following the procedure explained on page 23.

a. How to Write

①Push the Write Button.

The number shown in the Display will flash.

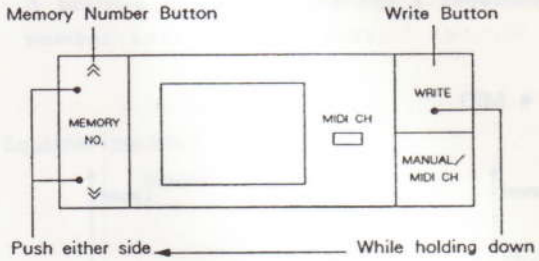


②Using the Memory Number Button ❽. select the Memory number where you wish to write the effect setting.

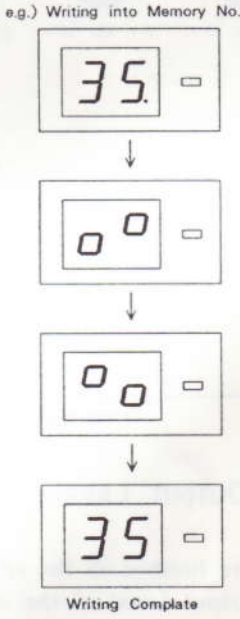
＊If you wish to write the effect into the Memory number that currently flashes, skip the above steps ① and ②.

At this stage, pressing the Write Button again can leave the Writing mode (the flasing of the number stops).

③While holding the Write Button down, press either side of the Memory Number Button.



The Display changes as shown below, and the writing is completed.



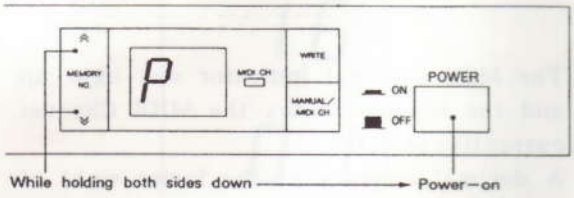
＊A deicmal appears at the lower right of the Memory number when any editing is made on that Memory number. It goes out when the edited data is written into memory.

b. Restoring Factroy Programmed Effects 1 to 20

Writing a new effect setting will automatically erase any previous data written in that location (=Memory number). However, the factory programmed effects from 1 to 20 Memory numbers can be restored at any time by following procedure.

⇨**Turn the DEP−3 off, then turn it on while holding the both sides of the Memory Number Button.**

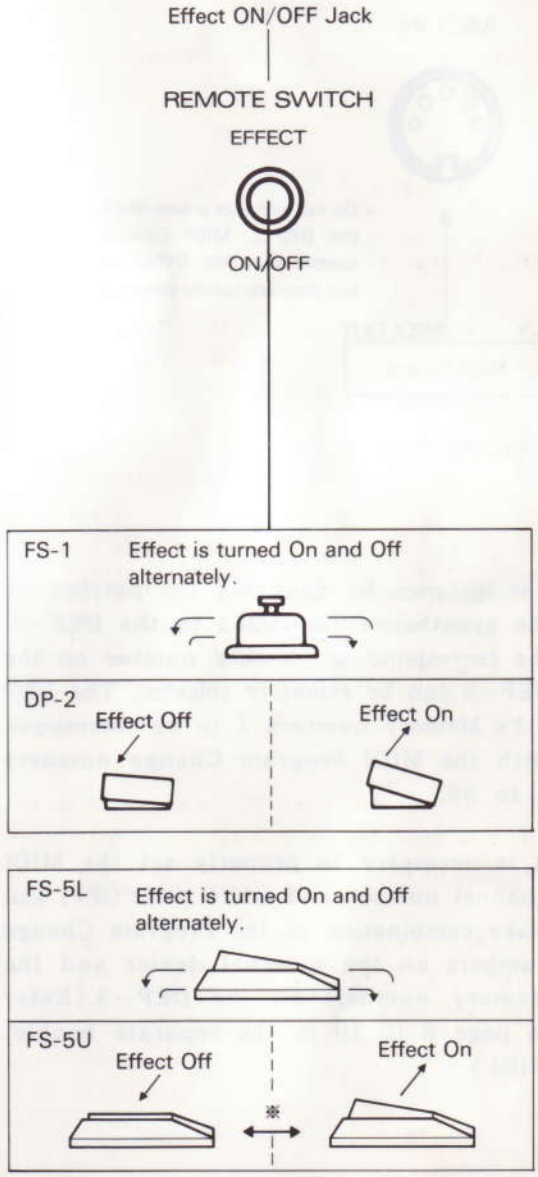
The Display shows P for about a second.



Now, all the Memory numbers from 1 to 20 are recalled.

6. REMOTE SWITCHES

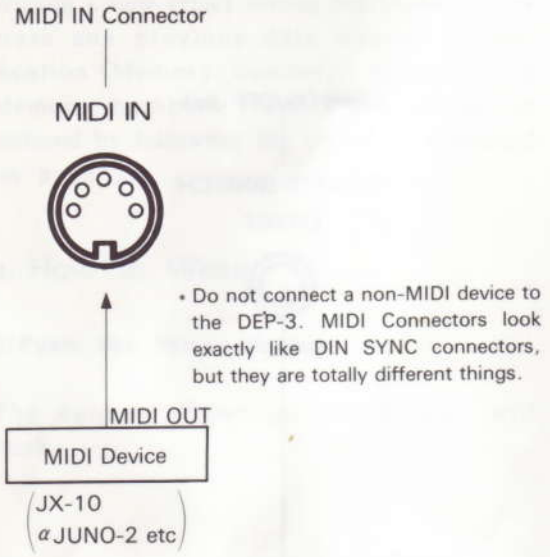
By connecting the optional footswitch FS −1, FS−5L, FS−5U or the pedal switch DP−2 to the Effect ON/OFF Jack, the effect can be turned on or off by pushing the pedal.



※ The polarity of the FS-5U can be Changed. This fact reverses the Operation (Effect on/off) of the pedal.

4 CHANGING MEMORY NUMBERS WITH MIDI

By connecting the DEP−3 to a MIDI device with a MIDI cable, you can call an effect setting on the DEP−3 by operating the connected device.

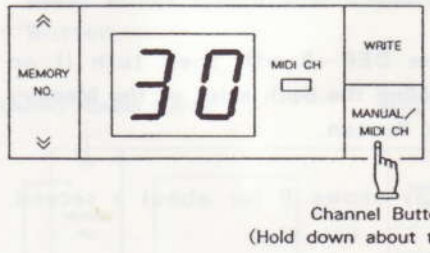

MIDI IN Connector
MIDI IN
• Do not connect a non-MIDI device to the DEP-3. MIDI Connectors look exactly like DIN SYNC connectors, but they are totally different things.
MIDI OUT
MIDI Device
(JX-10
αJUNO-2 etc)

For instance, by changing the patches on the synethsizer connected to the DEP−3, the corresponding Memory number on the DEP−3 can be remotely selected. The DEP−3's Memory numbers 1 to 99 correspond with the MIDI Program Change numbers 1 to 99.

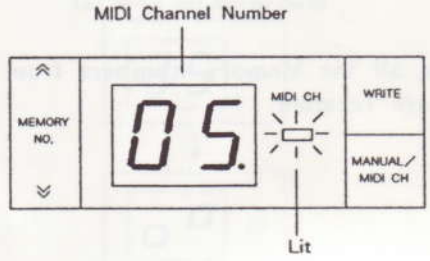
It is necessary to properly set the MIDI Channel number and OMNI ON/OFF, and make combination of the Program Change numbers on the external device and the Memory numbers on the DEP−3.(Refer to page 6 to 10 in the separate booklet MIDI.)

Setting OMNI ON/OFF and MIDI Channel

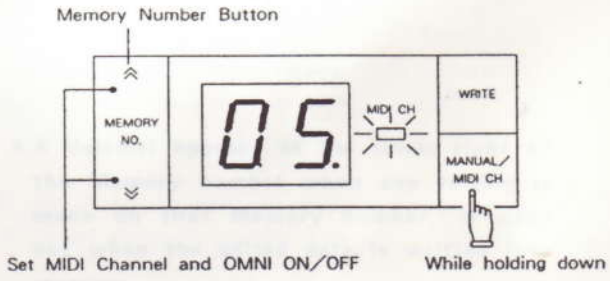
①Hold the MIDI Channel Button down for about two seconds.



The MIDI Channel Indicator will light up and the Display shows the MIDI Channel currently selected.
A decimal appears at the lower right of the MIDI Channel number in OMNI ON.



②Without releasing the MIDI Channel Button, select the MIDI channel number and the OMNI ON or OFF by using the Memory Number Buttons.

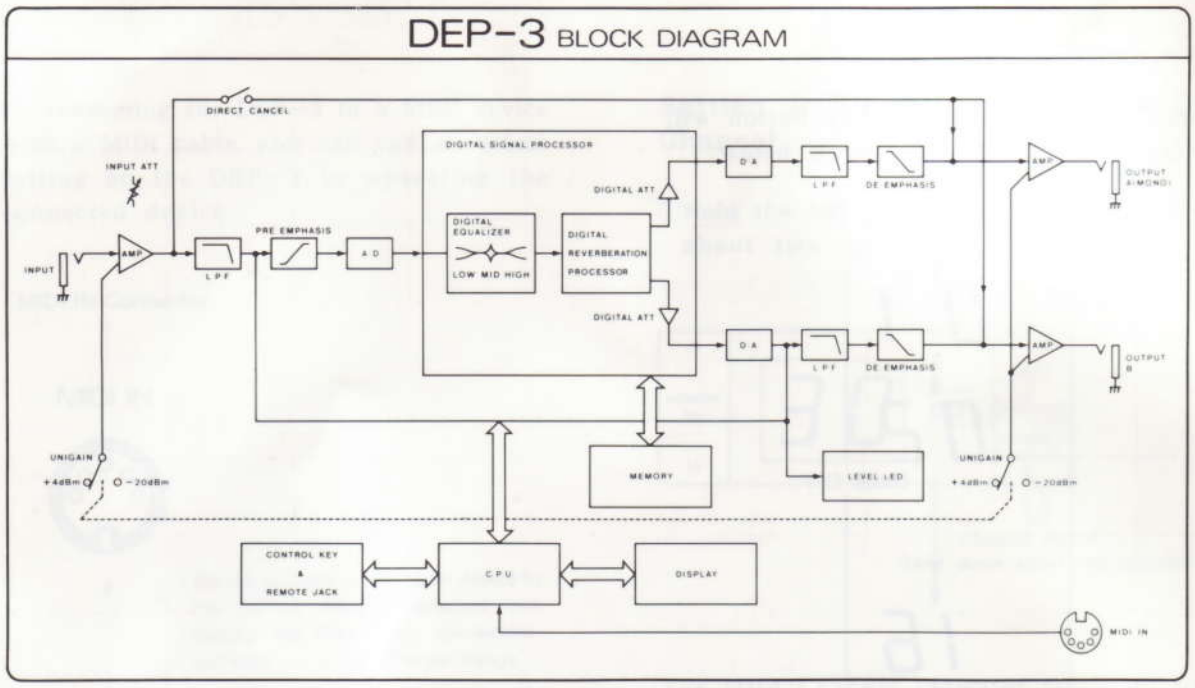


Pressing the Memory Number Button will change the Display as shown below.

③ Release the MIDI Channel Button.

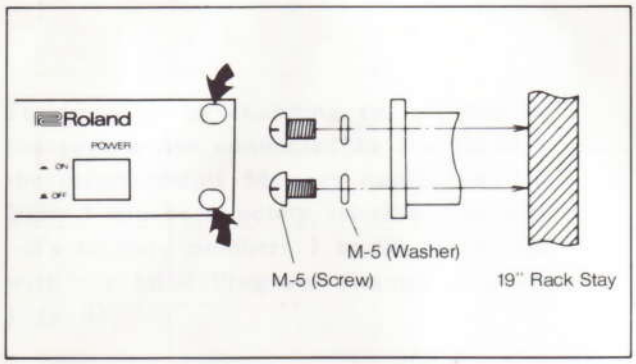
The MIDI Channel Indicator goes out and the DEP−3 returns to the normal condition. (The Display shows the Memory number.)

BLOCK DIAGRAM



FIXING TO THE 19" RACK

Use 5mm screws.



OPTIONS

Foot Switch FS-1

Pedal Switch DP-2

BOSS Foot Switch FS-5L

BOSS Foot Switch FS-5U

SETTING MEMO

MEMORY No.	REMARK	Effect Out	E Q			Pre Delay [ms]	Reverb Time [s]	HF Damp / Gate Time [ms]	Reverb Select
			Low [dB]	Mid [dB]	High [dB]	Delay Time [ms]	Feedback [%]	HF Damp	

5 SPECIFICATIONS

● **Input Level/Impedance**
+4dBm/ 47k Ω
−20dBm/47k Ω

● **Stereo Output Level/Impedance**
+4dBm (+18dBm max.) /600 Ω
−20dBm (−5dBm max.) /600 Ω

● **AD−DA System**
16bit Linear

● **Sampling Frequency**
32kHz

● **Frequency Response**
10Hz to 50kHz : +0,−3dB (Direct)
30Hz to 12kHz : +1,−3dB (Reverb)

● **SN Ratio (IHF A at Rated Input)**
82dB (Direct)
76dB (Reverb)

● **Dynamic Range**
Over 94dB (Direct)
Over 86dB (Reverb)

● **Total Harmonic Distortion (1kHz at Rated Input)**
Below 0.02% (Direct)
Below 0.08% (Reverb)

● **Pre−delay Time**
Reverb Mode : 0 to 120ms
Non−linear Mode : 0 to 120ms

● **Reverb Time**
Reverb Mode : 0.1 to 99s
Non−linear Mode : 0.1 to 10s

● **HF Damp Control**
×0.05 to ×1.0

● **Gate Time**
10 to 450ms

● **Delay Time**
2 to 500ms

● **Reverb Select**
Room: 1.0 to 15 (3 steps)
Hall : 15 to 26 (3 steps)
Plate : A and B

● **Equalizer Characteristic**
Low
Frequecny : 100Hz
Boost/Cut : ±12dB
Mid
Frequency : 1kHz
Boost/Cut : ±12dB
High
Frequency : 10kHz
Boost/Cut : ±12dB

● **Consumption**
15W

● **Dimensions**
482 (W) × 47 (H) × 289 (D) mm
19" (W) × 1−7/8" (H) × 11−3/8" (D)

● **Wight**
3.5kg/7lb 12oz

[FRONT PANEL]

● **Input Attenuator**

● **Control Knobs**
Effect Output Level
Equalizer Low (Boost/Cut)
Equalizer Mid (Boost/Cut)
Equalizer High (Boost/Cut)
Pre-delay Time
Reverb Time
High Frequency Damping/Gate Time
Reverb Select

● **Switches**
Memory Number
Write
Manual/MIDI Channel

[REAR PANEL]

● **Jacks**
Input
Output A and B
Remote Control (Effect ON/OFF)
MIDI IN Connector

● **Switches**
Direct
Level (Input/Output)

Digital Effects Processor

MODEL DEP-3 MIDI Implementation Chart

Date : Jan. 05. 1987
Version : 1.0

Function.....		Transmitted	Recognized	Remarks
Basic Channel	Default	×	1 – 16	memorized
	Changed	×	1 – 16	
Mode	Default	×	1 , 3	memorized
	Messages	×	OMNI ON/OFF	
	Altered	**********		
Note Number		×	×	
	True voice	**********	×	
Velocity	Note ON	×	×	
	Note OFF	×	×	
After Touch	Key s	×	×	
	Ch's	×	×	
Pitch Bender		×	×	
Control Change		×	×	
Prog Change		×	○ 0 – 127 **	
	True #	**********	0 – 98	
System Exclusive		×	○	Parameters
System Common	Song Pos	×	×	
	Song Sel	×	×	
	Tune	×	×	
System Real Time	Clock	×	×	
	Commands	×	×	
Aux Mes-sages	Local ON/OFF	×	×	
	All Notes OFF	×	×	
	Active Sense	×	×	
	Reset	×	×	
Notes		** n : Program Change Number When 0 ≦ n ≦ 98, it corresponds with Memory Number n+1. When n ≧ 99, it corresponds with Memory Number n−98.		

Mode 1 : OMNI ON, POLY
Mode 2 : OMNI ON, MONO
Mode 3 : OMNI OFF, POLY
Mode 4 : OMNI OFF, MONO

○ : Yes
× : No

Digital Effects Processor

MODEL DEP-3 MIDI Implementation

Date : Jan. 05. 1987
Version : 1.0

1. RECOGNIZED RECEIVE DATA

Status	Second	Third	Description
1100 nnnn	0ppp pppp		Program Change ppppppp = 0 - 127
1011 nnnn	0111 1100	0000 0000	OMNI OFF
1011 nnnn	0111 1101	0000 0000	OMNI ON
1111 0000	... ...	1111 0111	System exclusive

2. RECOGNIZED EXCLUSIVE MESSAGE

Exclusive message is based on following structure

	Byte	Description	
a	1111 0000	Exclusive status	
b	0100 0001	Roland ID #	
c	0000 nnnn	Device-ID # = MIDI basic channel where nnnn + 1 = channel #	
d	0001 0010	Model-ID # (DEP-3)	
e	0001 0010	Command-ID # (DT1)	
f	0aaa aaaa	Address MSB	*2-1
g	0bbb bbbb	Address LSB	
j	0ccc cccc	Data	
k	0ddd dddd	Data	
l	0eee eeee	Data	
m	0fff ffff	Data	
n	0ggg gggg	Data	
o	0hhh hhhh	Data	
p	0iii iiii	Data	
q	0jjj jjjj	Data	
r	0kkk kkkk	Checksum	*2-2
s	1111 0111	End of System Exclusive	

Notes :

*2-1 If aaaaaaa - bbbbbbb doesn't indicate the top address of the parameter, the message will be ignored.

*2-2 Summed value of the all bytes between Command-ID and EOX must be 00H (7 bits). It is not include Command-ID and EOX.

3. Address mapping of parameters

Address of parameter

0000 ; Temporary parameter

0	00aa aaaa	EFFECT OUTPUT LEVEL
1	00bb bbbb	BOOST/CUT OF LOW FILTER
2	00cc cccc	BOOST/CUT OF MIDDLE FILTER
3	00dd dddd	BOOST/CUT OF HIGH FILTER
4	00ee eeee	PRE DELAY or DELAY TIME
5	00ff ffff	REVERB TIME or FEEDBACK OF DELAY
6	00gg gggg	HF DAMP or GATE TIME
7	00hh hhhh	REVERB SELECT

0080 ; Memory number 1

0	00aa aaaa	EFFECT OUTPUT LEVEL
1	00bb bbbb	BOOST/CUT OF LOW FILTER
2	00cc cccc	BOOST/CUT OF MIDDLE FILTER
3	00dd dddd	BOOST/CUT OF HIGH FILTER
4	00ee eeee	PRE DELAY or DELAY TIME
5	00ff ffff	REVERB TIME or FEEDBACK OF DELAY
6	00gg gggg	HF DAMP or GATE TIME
7	00hh hhhh	REVERB SELECT

0100 ; Memory number 2
:
7

0180 ; Memory number 3
:
7

:
:

3180 ; Memory number 99
:
7

Notes :

The actual values obtained on the DEP-3 differ from the values sent with MIDI (#0-#63).
From the Roland distributer in your country, you can attain the table that shows how the MIDI values correspond to the actual values on the DEP-3.

DEP-3

'87-CGA1-2S

Roland